SCIENTIFIC AMERICAN.

THE ADVOCATE OF INDUSTRY AND ENTERPRISE, AND JOURNAL OF MECHANICAL AND OTHER IMPROVEMENTS.

VOLUME I. NEW-YORK, THURSDAY, SEPTEMBER 11, 1845. NUMBER 3.

THE
SCIENTIFIC AMERICAN,
PUBLISHED EVERY THURSDAY MORNING, AT NO. 11 SPRUCE STREET, NEW YORK, NO. 16 STATE STREET, BOSTON, AND NO. 21 ARCADE, PHILADELPHIA,
(THE PRINCIPAL OFFICE BEING IN NEW YORK,)

By RUFUS PORTER.

Each number will be furnished with from two to five original engravings, many of them elegant, and illustrative of *New Inventions*, *Scientific Principles*, and *Curious Works*; and will contain, in addition to the most interesting news of passing events, general notices of the progress of Mechanical and other *Scientific Improvements*; American and Foreign Improvements and Inventions; Catalogues of American Patents; Scientific Essays, illustrative of the principles of the sciences of Mechanics, Chemistry and Architecture; useful information and instruction in various Arts and Trades; Curious Philosophical Experiments; Miscellaneous Intelligence, Music and Poetry.

This paper is especially entitled to the patronage of Mechanics and Manufacturers, being the only paper in America devoted to the interests of those classes; but is particularly useful to farmers, as it will not only apprise them of improvements in agricultural implements, but instruct them in various mechanical trades, and guard them against impositions. As a family newspaper, it will convey more useful intelligence to children and young people, than five times its cost in school instruction. Another important argument in favour of this paper, is, that it will be worth two dollars at the end of the year when the volume is complete, and will probably command that price in cash, if we may judge from the circumstance that old volumes of the New York Mechanic, by the same editor, will now command double the original cost.

TERMS.—The "Scientific American" is furnished to subscribers at $2 per annum, payable in advance, and the balance in six months.

Five copies will be sent to one address six months, for four dollars in advance.

Any person procuring two or more subscribers, will be entitled to a commission of 25 cents each.

Rain in Summer.

BY H. W. LONGFELLOW.

How beautiful is the rain! After the dust and heat, in the broad and fiery street, in the narrow lane, how beautiful is the rain!

How it clatters upon the roofs, like the tramp of hoofs! How it gushes, and struggles out, from the throat of the overflowing spout! across the window-pane, it pours and pours, and swift and wide, with a muddy tide, like a river down the gutter roars the rain, the welcome rain!

The sick man from his chamber looks at the twisted brooks; he can feel the cool breath of each little pool; his fevered brain grows calm again, and he breathes a blessing on the rain!

In the furrowed land the toilsome and patient oxen stand, lifting the yoke-uncumbered head; with their dilated nostrils spread, they silently inhale the clover-scented gale, and the vapours that arise from the well-watered and smoking soil, for this rest in the furrow after toil, their large and lustrous eyes seem to thank the Lord, more than man's spoken word.

Near at hand, from under the sheltering trees, the farmer sees! his pastures and his fields of grain, as they bend their tops to the numberless beating drops of the incessant rain. He counts it as no sin that he sees therein only his own thrift and gain.

These, and far more than these, the Poet sees! He can behold Aquarius old walking the fenceless fields of air; and for each ample fold of the clouds about him roll'd, scattering every where the showery rain as the farmer scatters his grain.

He can behold things manifold that have not yet been fully told—have not been wholly sung or said: for his thought, which never stops, follows the water-drops down to the graves of the dead; down through chasms and gulfs profound, to the dreary fountain head of lakes and rivers under ground; and sees them, when the rain is done, on the bridge of colours seven, climbing up once more to heaven, opposite the setting sun.

Thus the seer, with vision clear, sees forms appear and disappear, in the perpetual round of strange mysterious change from birth to death, from death to birth, from earth to heaven, from heaven to earth, till glimpses more sublime of things before, unto his wondering eyes reveal the universe, as an immeasurable wheel turning forever more in the rapid and rushing river of Time.

Antipathies.

I hate long stories, and short ears of corn,
A costly farm-house, and a shabby barn;
More curs than pigs, no books, but many guns,
Corned toes, tight boots, old debts, and paper duns.
I hate tight lacing, and loose conversation,
Abundant gab, and little information;
The fool who sings in bed, and snores in meeting,
Who laughs while talking, and who talks while eating.

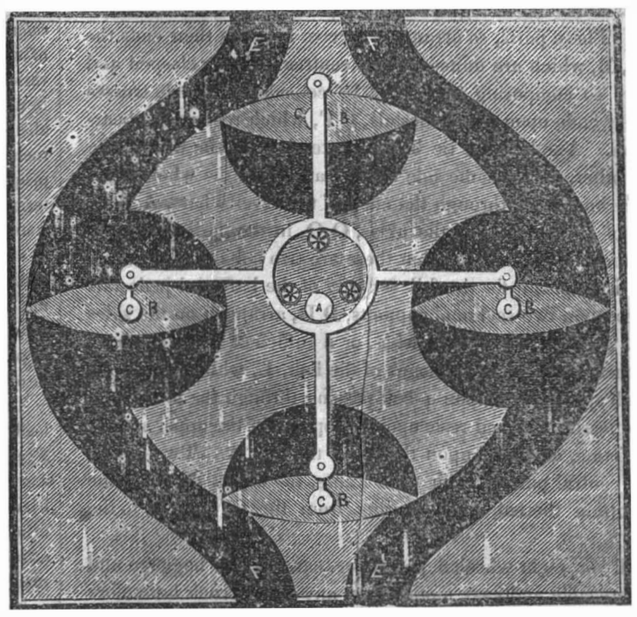
THE QUADRUPLE INVENTION.

DOUBLE-ACTION PARALLEL ROTARY STEAM-ENGINE.

By this invention, every difficulty which has prevented the utility of the different kinds of rotary steam engines hitherto invented, is completely avoided. This steam-wheel has no valves, and may be driven three thousand revolutions per minute, and the pressure of steam being equally applied to opposite sides, does not wear nor injure the pivots or bearings. An engine capable of working ten horse powers, only requires a space six inches square! A sectional view of this invention is shown below.

THE DOUBLE-ACTION PARALLEL WATER-WHEEL.

This invention has a great advantage over all other water-wheels, in that as it works the whole power of the quantity and fall of the water, and moves with an equal velocity with the water, being so constructed that the water cannot escape but by the motion of the wheel. It works freely under the water, so as not to be affected by ice nor by back-water. This wheel requires but little space, and is easily constructed. A sectional view is shown below.



THE DOUBLE-ACTION PARALLEL BLOWING-WHEEL.

This invention is calculated for blowing furnaces for founderies or steam engines. It will blow from two to three times as much wind as the common fan-wheel, in proportion to the quantity of power applied. As a blast is produced from each side of a single wheel, it may be made to blow two furnaces at the same time. Neither the cost of construction, nor the space occupied, is equal to that of one half of common fan-wheels. A plan of the wheel is shown below.

THE DOUBLE-ACTION PARALLEL ROTARY PUMP.

Of all rotary pumps, this is decidedly the cheapest, most useful, and least liable to wear out. A pump of this kind, which costs only ten dollars, will raise a column of water fifty or a hundred feet, from a well, and at the same time project a stream fifty feet high. The weight and resistance of the water, bearing equally on opposite sides of the revolving part, it operates freely, and is not liable to be impaired by use. A sectional view of this pump is shown in the engraving below.

THE grand point of excellence in this invention, and which principally constitutes its complete superiority over all other rotaries, consists in its parallel principle, which gives an equal pressure on opposite sides of the wheel at the same time. This peculiarity completely evades the main obstacle which has uniformly prevented the success of steam-wheels and water-wheels, which have been constructed on the arbitrary principle. They have been subject to such severe pressure on one side, that the central pivot would soon become worn so as to vary from the true centre. A steam-wheel capable of working ten horse-powers, may be constructed for $50. Water-wheels on this plan may be made to run under water, so as to be safe from the effects of frost, and will work double the power of an ordinary water-wheel. A blow-wheel on this plan, will drive about four times as much wind, in proportion to the power applied, as the common fan-wheel. The right of constructing and using these wheels, in either capacity, will be given on terms that cannot fail to prove satisfactory. For further intelligence apply at this office.

EXPLANATION.—A horizontal wheel is mounted on a vertical shaft, A. In the periphery or sides of the wheel are four semicircular cavities, in which the eliptic floats or wings, B B B B, are mounted on vertical pivots. The dark part of the engraving represents two channels through which the steam, water or air passes, between the wheel and the casing. The fluid enters at E E, and is discharged at F F. The four wings do not turn on their pivots, but are kept in their parallel position by means of four cranks at the head of the pivots, C C, which connect with four arms which project from a circle which compasses the centre shaft, and is kept in its position by three friction-wheels, the axle-pivots of which are attached to an upper floor or casing, which is to be placed over the wheel. Thus it will be seen that each opposite pair of wings, in their turn, fill the two channels, so that the two currents of fluid cannot pass nor escape but by the motion of the wheel;—thus driving, or being arbitrarily driven, by the wheel, the two forces so balancing each other that the wheel is not subject to the least friction or wear.

A NEW MATERIAL FOR ROOFING.—We learn, from the Philadelphia Ledger, through the communication of a "Mechanic," that a new method for roofing houses has been invented by two gentlemen of that State, which is "more durable than shingles, slate, or tin, as brilliant as glass, fire-proof and water-proof; red, blue, green, or any other colour that may be desired; a non-conductor of electricity, a reflector of heat, cheaper than tin, lighter than slate; being vitrified, it is almost indestructible by time or weather, and so easily put on that the largest roof can be put on in a single day, if desired. It requires very little descent; a roof covered with this material may be covered as flat as any tin roof without the least danger of leaking. Nothing short of actual violence will injure it. Should it come into general use our cities will outshine the Kremlin of Moscow. When a house with a slate roof is on fire, the slates fly so that firemen are in great danger should they come near it; but this article, having passed through the fire in the process of manufacture, is not liable to this objection; its durability is such that it will last as long as the house."—*Farmer & Mechanic.*

PROGRESS OF IMPROVEMENT.—Before the war of 1815, the only canals in the United States were the Middlesex canal in Massachusetts, 27 miles in length, and finished in 1808, and the Sanatee canal in South Carolina, 22 miles in length. The canals now completed have cost upwards of one hundred millions of dollars.

In 1683, there belonged to the city of New-York three barques, three brigantines, twenty-six sloops, and forty-eight open boats. In 1769 the imports were £138,976 sterling, or $839,782; and in 1799 the exports were $17,262,729. In 1800 the amount of duties on merchandise imported into the city was $3,611,588. In 1844, the total exports amounted to $34,623,449.

QUICK SAILING.—The Pittsburg Gazette says that the J. M. White, Capt. Jos. M. Convers master, has made a trip from New-Orleans to St. Louis, 1180 miles, aginst a tremendous current, in 3 days, 23 hours and 9 minutes! This is at the rate of 4 minutes 50 seconds, and 17-60 of a second to the mile—about 12 and 1-3 miles an hour, including all stoppages! This is the quickest trip ever made, and the J. M. White is a Pittsburg boat. But this passage is no test of her actual speed against time; to ascertain that, we must take some run she has made without stopping her wheel. She has made the run from New-Orleans to Donaldsonville, 82 measured miles, in 4 hours and 35 minutes, being at the rate of a mile in 3 minutes, 21 seconds and 13-60ths of a second, or 18 miles an hour against the current of the Mississippi!! Pittsburg against the world.

WONDERS OF THE IRON MANUFACTORY.—The amount of iron produced in the United States, is three hundred thousand tons; all of which, and much more, is consumed in this country. The amount of nails alone is supposed to be fifty thousand tons. Forty thousand casks or four million pounds, are annually made by the Boston Company. Suppose that the nails will average one hundred and sixty to a pound, the number here produced each working day, would be nearly two millions. This is supposed to be but the twenty-fifth part of the nail manufacture of the United States. It seems incredible that about fifty millions of nails are made, bought sold and used, every day, in the United States, yet such appears to be the fact.

THE POPE ON RAILWAYS.—The Frankfort Journal makes the following odd announcement, under date 17th July, from Rome:—"The Pope has declared once for all that he will not allow railways to be established in the Pontifical States, for it would be dangerous to allow them in a country where there exists such political agitation."

DISTANCES OF THE PLANETS FROM THE SUN.—The vast extent of the solar system is but vaguely to be conceived from the ordinary mode of stating it in millions of miles. To demonstrate it in a more striking and impressive manner, a continential astronomer has proposed, or rather renewed the proposal, that the computed distances of the planets be measured by comparison with the velocity of a cannon ball, rated at 1 1-2 German miles per minute. With this velocity a cannon ball fired from the sun, would reach the planet Mercury in 9 years and 6 months; Venus in 18 years; the earth in 25 years; Mars in 38; Jupiter in 130; Saturn in 238; and Uranus (Herschel) in 479 years. With the same velocity a shot would reach the moon from the earth in 23 days, little more than three weeks.

PITTSBURG.—The *Pittsburg Gazette* speaks of the rapid growth of manufactories in that city. Among other mills is mentioned a tack and brad factory, that turns out 4,000,000 to 5,000,000 per day. Two rolling mills of the largest size are building. There is also a cotton factory 150 feet long, 50 feet wide, and five stories high, to run 7,000 spindles, a corresponding number of looms, and to be propelled by steam. A smaller mill is nearly ready to run, of which no dimensions are given.

FACTORY GIRLS' SAVINGS.—The amount of money deposited by the female operatives in the Lowell Savings' Bank, is equal to *twelve hundred and fifty* dollars for every Factory girl in the place. Some of them have saved two thousand dollars each! the interest of which, at seven per cent, would support them for life. Two thousand poor working girls in New-York are barely able to support themselves.

A LARGE FAMILY.—An Old rattlesnake with *eighty* little ones, were killed a few days since, in Danvseer, Mass. When discovered, the little snakes all hurried to the mother for protection.

CATALOGUE OF AMERICAN PATENTS
ISSUED IN 1844.

CLASS III—*Manufactures of fibrous and textile substances, including machines for preparing fibres of wool, cotton, silk, fur, paper. &c.*

[CONTINUED.]

Method of Curing and Cleaning cotton, wool &c.,—Silas G. Mumford, North Providence, R. I. March 28th.

Gin, cotton, in the roller.—Richard Reynolds jr., Beaufort, S. C., Feb. 20th.

Gin, cotton, saw gin for grinding cotton.—E. Carver, Bridgewater, Mass., April 4th, and J. H. Sherard, Livingston, Ala., April 30th.

Machine for pressing hats and bonnets.—Caleb Merritt, Baltimore, Md., March 13th.

Improvement in the manufacture of hats.—John Maguire, Washington, D. C., Dec. 7th.

Hemp-breaker and cleaner.—C. B. Butler, Petersburg, Tenn. Jan 6th.

Hemp and flax brake.—Aaron F. Bruce, Marshall, P. O., Mo., June 24th.

New mode of heckling and spinning hemp.—Wm. Montgomery, Boston, Mass., Feb. 20th.

Preparing and spinning hemp.—Moses Day, Roxbury, Mass., reissued March 13.

Loom for weaving fish-nets,—J. Carr, J. Shanmore, & Wm. Carr, Sunbury, Penn., Sept. 14th.

Knitting Loom.—R. Walker, and J. Mc'Intire, Portsmouth, N. H., Feb. 12th, and Pierre E. Ladrange, France; patent granted in France June 1st 1843; in U. S. Oct. 16th. 1844.

Improvement in power loom.—James Nield, Taunton, Mass., May. 25th.

Loom, regulating the delivery of the warp from the warp beam.—Wm. H. Brayton, Warren, R. I., Jan. 6th.

Rotary temples for looms.—Isaac C. Lane, Waltham, Mass., March 26th.

Method of making sand paper, glass or emery.—Edmund Norris, Philadelphia, Pa., Sept. 14th.

Silk-reels.—James S. Harris, Poultney, Vt. July 30th.

Improvement in bobbing, method of operating in machinery for spinning fibrous substances.—Francis Mc.Culley, jr., Patterson, N. J. Oct. 30th.

Flier and dead spindle for spinning—Phineas Stevens, Naskua, N. H., April 20th.

Hook spinner and twister, whirling and rotary—John Thorp, North Wrentham, Mass., Sept. 27th.

Mode of combining wool—George E. Donisthorpe, Bradford, Eng.—(American patent Sept. 11th.)

Mode of combining wool—Ezra Gould, Paterson, N. J., Oct. 9th.

CLASS IV—*Chemical Processes, Manufactures, and Compounds, including Medicines, Dyeing, Colour-making, Distilling, Soap and Candle making, Mortars, Cements, &c.*

Method of making cements—Wm. H. Smith, Georgetown, D. C., June 10th.

Water-proof cements and figments—Edward Dentsch, France, (granted in England, Oct. 8th, 1842,) in U. S. May 25th, 1844.

Colouring and hardening wood—C. F. Spicker, New York, June 24th.

New composition for aqueduct pipes—Gideon Myers, Bridgewater, N. Y., March 28th.

Composition for dyeing the hair—Auguste Grandjean, New York, Feb. 28th.

Composition for glazing—Thomas and Ephraim Parker, Orangeville, Pa., Feb. 20th.

Composition for making brick—Nathaniel J. Wyeth, Cambridge, Mass., March 28th.

Water-proof composition for leather—William J. Roome, New York, Jan. 6th.

Invention of machinery for dyeing yarn—Amoskeag Manufacturing Co., assignee of William A. Burke, Manchester, N. H., May 30th.

Friction matches—Elisha Smith, Erving, Mass., Oct. 3d.

New mode of making lamp-black—John G. Mini, Philadelphia, Pa., Nov. 13th.

Method of preparing lard—H. A. Amelung, Alton, Ill., Nov. 13th.

Rendering lard—Ebenezer Wilson, Cincinnati, Ohio, Oct. 9th.

Mash-tubs—Benjamin Roops, Pekin, Ohio, Oct. 9th.

Machines for making mercurial ointments—Jas. W. W. Gordon, Baltimore, Md., June 5th.

Ointments for piles—Wm. W. Riley, Mansfield, Ohio, Jan. 31st.

Fire and water-proof paints—Joseph Weisman, Philadelphia, Pa., Feb. 20th.

Improvement in making salæratus—Edw'd Chamberlin, Boston, Mass., Sept. 20th.

Making salt—Isaac Noyes, Kanawha Saline, Va., April 25th.

Sealing-wax, igniting—Joseph Fatman, Philadelphia, Pa., April 17th.

Silvering looking-glasses—Thos. Drayton, Brighton, England, Nov. 25th, 1843—U. S., Aug. 12th, 1844.

Method of purifying soaps and oils—Arthur Dunn, Rotherhithe, England, Nov. 9th, 1843—U. S., Dec. 4th, 1844.

Sugar-boilers—Abraham Hager, Donaldsonville, La., March 9th.

Sugar candy—Henry and George Garrison, Newburgh, N. Y., April 10th.

Cleaning sugar—Joseph Hurd, Storeham, Mass., Oct. 3d.

Filters for sugar, &c.—John Watson, Elizabethtown, N. J., Jan. 31st.

Cutting tallow, &c.—Zabina Ellis, Kingston, Pa., Oct. 12th.

Renovating tobacco—Enoch Huse, Newburyport, Mass., July 22d.

CLASS V—*Comprising Lamps, Fireplaces, Stoves, Grates, Furnaces for heating buildings, Cooking Apparatus, Preparation of Fuel, &c.*

Mode of building chimneys to prevent smoking—Joseph Gilbert, Frease's P. O., Ohio, Nov. 13th.

[To be continued.]

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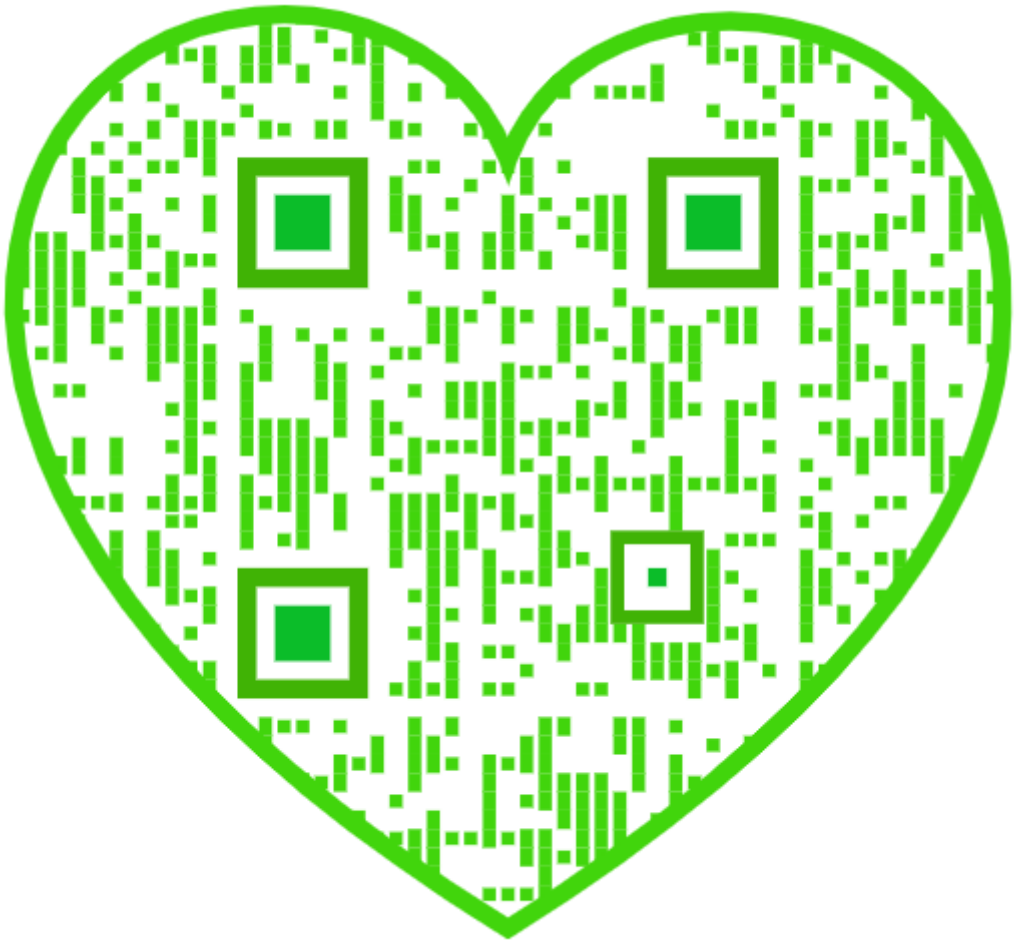
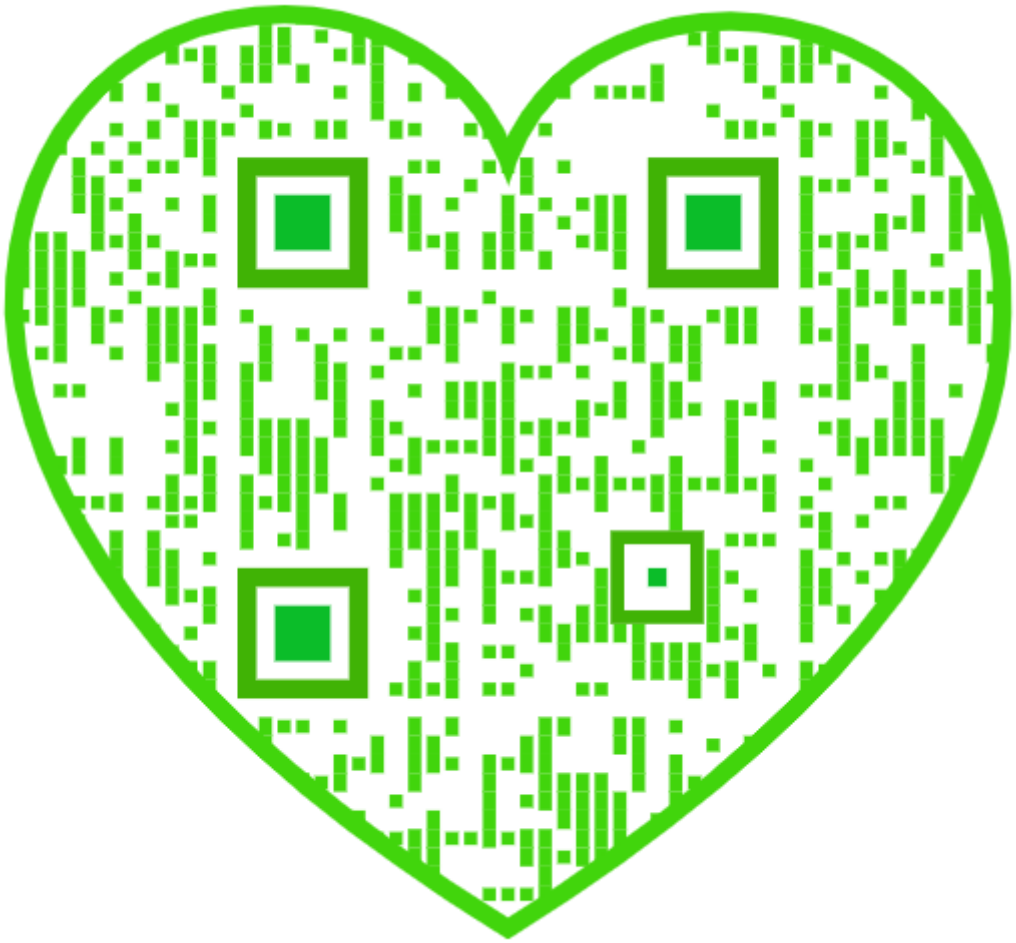




SCIENTIFIC AMERICAN

NEW-YORK, THURSDAY, SEPT. 11.

THE ONE DOLLAR REMITTANCE.—We thank our kind patrons for their promptness: but would remind those few who have received the second number of this paper, but have not yet sent the first dollar according to stipulation, that promptness in this case, is essentially important to us. We trust they will save us the trouble of calling on any one by name.

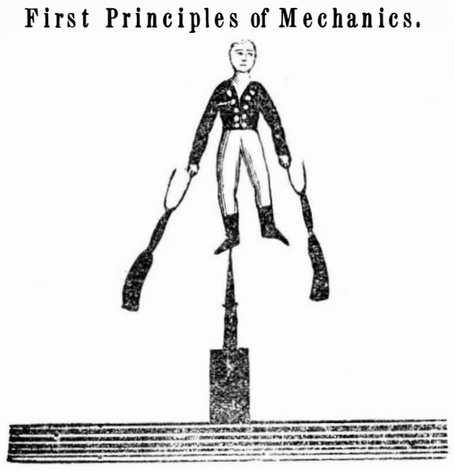
REPUBLISHING.—It appears to be the wish of many of our subscribers, who have not had the perusal of the "New York Mechanic," that we should insert in this, some of the most interesting articles from that paper. We trust our former patrons, who have seen those articles before, will not regret their insertion.

SECURE THE FIRST NUMBERS.—We have a few copies of our first number remaining, and those who intend to become subscribers will do well to secure them while they may. There will soon be a pressing demand for them, when too late.

PLENTY OF MATERIAL.—We have on hand a variety of scientific matter, and interesting intelligence of railroads and other subjects, which, together with the music prepared for this number, are unavoidably deferred.

POSTMASTERS and others to whom this paper may be sent, are respectfully solicited to exhibit the same to others, that its patronage may be thus extended.

First Principles of Mechanics.



In pursuance of our subject, illustrating the laws and effects of gravity, we have placed at the head of this article a representation of a miniature image, balancing on the point of a needle or pointed spindle, and holding in each hand a common table fork. We have selected this simple mode of illustration, that our juvenile readers may find the means of experimenting on this important point of natural philosophy, completely within their reach. It will be seen that one tine of each fork is fixed in one of the hands of the image, and the handles or helves descend some distance below the feet so that if the body of the image inclines in one direction, the fork handles are moved in a contrary direction, and consequently are elevated or raised somewhat higher than when the image stands upright. Now the helves of the forks being supposed to be made of iron, while the image is lightly constructed of light pine wood, the said handles preponderate over the image, and by their superior weight, hold the image in an upright position, as represented above. In this instance the force of gravity, by causing the heavier parts of the apparatus to seek the lowest possible position, elevates the lighter part,—the body of the image. And the figure is held in its present position, by the equality of the force which gravity exerts on each helve; for it will be readily seen, that if one fork approaches the spindle, the consequent elevation of the other, is greater than the descent of the first can be by this movement. And as neither of the helves have any direct tendency to approach the spindle, only as that by so doing they gain a position a little nearer the earth, it cannot be supposed that either of them, by approaching one inch nearer to the earth, could force the other two inches farther from it: but, on the contrary, if one could be indulged with two inches perpendicular descent, at the expense only of elevating the other one inch, it would readily do it. And this would be the case if one of the helves were forced down to the spindle, and then let go: the other would preponderate, and both, after vibrating awhile, would rest at their present position, and always at the precise point, at which the action of gravity on each becomes equal, thus mutually accommodating each other.

If this image with the forks be put in motion rotarily, the motion will be continued by inertia, until the resistance of the atmospheric air, united with that of the friction produced by the motion of the foot of the image on the point of the spindle, shall have become equal to the force already applied to produce the said motion. And during the whole of this process gravity will have maintained its ascendency by supporting the upright position of the *little wooden man*.

We may here remark, however, with regard to the force of gravity, that it is not wholly directed towards one point, or in one direction. The whole earth (to say nothing of other bodies) attracts each particle; and each part attracts each. Consequently, a body on the surface of the earth is attracted not merely downward, but horizontaliy in all directions. But as the greatest quantity of earth is in the direction of its centre, and as the attractions in all other directions are balanced by each other, the effects of their united attractions are precisely the same, as if this force was exerted in only a vertical direction; and this brings us to the subject of Equilibrium. (To be continued.)

DAVENPORT & BRIDGES' IMPROVED CARS.

Fig. 1.

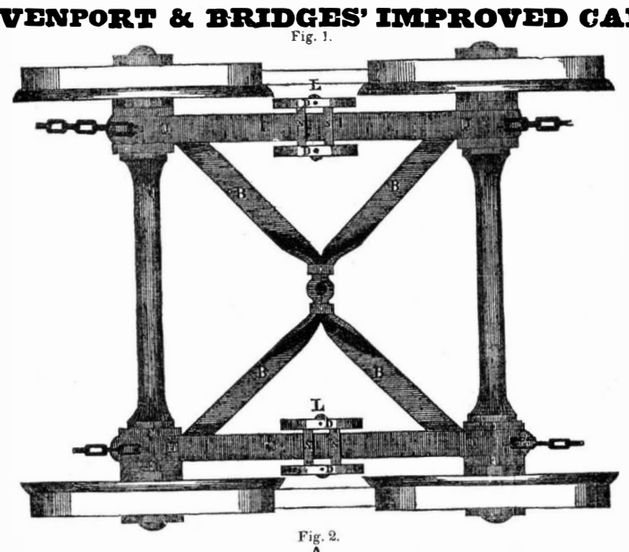
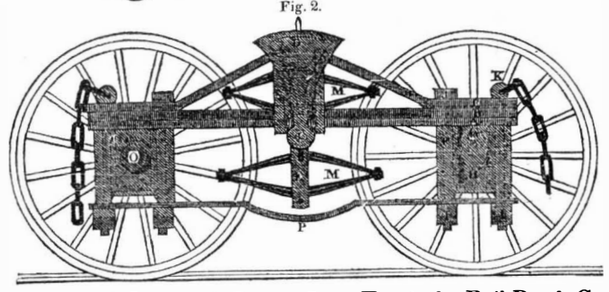


Fig. 2.



DAVENPORT & BRIDGES' Improved Patent Iron Truck for Rail-Road Cars, is presented above, and the attention of Rail-road Companies is respectfully invited to the following description of their justly-celebrated invention:

Figure 1 of the drawing above represents a top view or plan of this Improved Rail-road Truck. Figure 2 is a central, longitudinal, and vertical section. C, Fig. 1 and 2, represents the arched bars of the side trusses: they consist of two long bars of plate iron, (about three inches wide by seven-eighths of an inch thick,) bent into the shape as seen in drawing 2. Each of them is placed directly over a flat and straight tie bar, A, which extends from one end to the other, as seen in Fig. 2. These parts, so arranged, receive between their ends the ends of diagonal cross bars or braces, B, which are united at their centres by being clasped and welded, as seen in Fig. 1. The bars so composing what may be considered as side trusses and diagonal cross braces, rest at their ends upon four pedestals, F F, which receive the bearings or boxes for the wheels to run on. Another flat tie bar, P, extends from the under side of one of the pedestals to that of the other, on the same side of the frame, and the whole is secured together by eight bolts, J J, passing down through the ends of the several bars, A B C, and the pedestals, and on each side of the journals of the axles, O O, in the positions represented in the drawings. From the above it will be seen that there are two bolts to each pedestal, and that this number is all that is requisite for the full security of the bars and pedestals together. The body rests and moves upon two sectional supports, D D, arranged on the sides of the truss frames, as seen in Fig. 2: they extend somewhat, or a sufficient distance above the truss frames, and are jointed at their lower ends by means of the bolt, L, which rests upon the top of the lower spring, M, which spring rests upon a bolt passing through the lower part of the inverted strap, E, which strap passes over and rests upon the top part of the upper spring, M, which is placed within the truss frame, and rests upon the top of the bar, A. Two bands, N N, are placed entirely around the central part of each truss frame, the object of the same being to transfer the strain, or a portion thereof, of the spring, from the tie bar, A, to the arched bar, C.

These Trucks are adapted as well for eight-wheeled passenger cars as for baggage and freight cars, giving to each a more agreeable and easy motion than any other Truck heretofore constructed or in use. They are simple in their construction, combining strength and great durability, although weighing at least twelve hundred pounds less than the common Trucks. Besides these excellences, by reason of the elasticity of the braces, B B B B, as seen in the drawing, and the other peculiarities of construction, the weight is *equalized* upon all the wheels, and yet any one may be raised so as to pass any inequality on the rails without lifting either of the other wheels from the track, thus rendering it almost impossible to run a car off. Being bound, and having ar it were but four joinings, they are protected from injury by lateral strains, and in case of damage are easily repaired.

Curious Arts.

TO DYE SILK A BRILLIANT GOLD COLOUR.—Take any quantity of nitro muriate of gold, and evaporate by exposing it to a gentle heat in a glass tumbler or phial; the gold will form itself in crystals on the bottom and sides of the vessel; collect these crystals and dissolve them in ten times their weight of pure water. Then put a gill of water into a common flask, and add one ounce of granulated zinc, and one fourth of an ounce of sulphuric acid. Hydrogen gas will be evolved, and rise through the neck of the flask, which must not be stopped. Immerse a piece of white silk in the abovementioned aqueous solution of gold, and expose it, while wet, to the current of gas as it rises from the flask; the gold will soon be revived, and the silk will become beautifully and permanently gilt. Any letters or flowers may be drawn on the silk with a camel-hair pencil dipped in the solution, and on being exposed to the action of the gas, will be revived and shine with metalic brilliancy. The silk must be kept moist with water till the gold is revived. Zinc may be prepared for the above purpose, by melting it, and stirring it continually with a stick or iron rod while it is cooling; or it may be pulverized with a hammer as soon as it becomes solid.

TO DYE SILK A BRILLIANT SILVER COLOUR.—Proceed as directed in the last experiment, only use the nitrate of silver, instead of nitro muriate of gold. The process of crystalizing, redissolving, &c., is the same. But the crystals of silver differ in colour, being white, whereas those produced from gold are yellow. If a jar or box be filled with hydrogen gas, and the silk usspended in it, the action of the gas, and consequently the revivification of the metals will be more uniform. For small figures, however, it may be as well to fix a stopper in the flask, having a small orifice through it, that the gas may be thrown with some force on the silk and will have a more certain effect. A solution of muriate of tin may be managed in a similar manner, but none of these solutions can be thus revived on paper.

FAST NAILING.—It is estimated that no less than 400 tons of nails are manufactured and used daily in the United States. This would amount to about 48,000,000 in number, allowing 60 to the pound, which would be 4,000,000 per hour, allowing twelve hours for a day's work; or 66,666 per minute; or 1,111 per second;—sufficient to give constant employment to 3,000 carpenters with their hammers, to drive them. What a clattering would there be if they were at work all together.

Interesting Experiments.

TO PRODUCE A PICTURE INSTANTLY IN A VARIETY OF COLOURS.—Paint any picture on paper in the usual way, only instead of colours use the following substitutes: for green, use a solution of nitro-muriate of cobalt—for blue, a solution of sulphate of iron—for yellew, a solution of nitrate of bismuth—and for a brown, a solution of sulphate of copper. Any of these solutions may be more or less diluted, as the respective parts of the picture are to be light or dark, but none of them must be strong enough to colour the paper. This picture is invisible: but when it is required to appear, the paper may be tacked up on the wall, and having a glass of the transparent solution of prussiate of potass, (which by sight cannot be distinguished from clear water,) dashed suddenly upon it, the picture will instantly appear in its full colours. A similar effect may be produced by drawing the picture with infusion of galls, and subcarbonate of potass; this is revived by a solution of sulphate of iron, and appears in a yellow and brown colour.

TO MAKE A WRITING APPEAR AND DISAPPEAR AT PLEASURE.—Dissolve equal parts of sulphate of copper and muriate of ammonia in water, and write. When you would make the writing appear, warm the paper gently by the fire; the writing will appear in a yellow colour, but as soon as you take the paper into the cold air, the writing will vanish. This may be often repeated.

THE MAGNETIC TELEGRAPH.—The survey of the route for the Telegraph from New-York to Baltimore, has been made as far as Norristown, Pa., via. New Hope and Doylestown. It is contemplated to continue the line direct to Baltimore, with branches from Norristown to Philadelphia and other places. The line from Albany to Utica is rapidly progressing. The posts are already on the ground ready for erection, as far as Little Falls. A part of this line will go into operation in a few days.

We intend giving a description, and explaining the principles of this invention, in a few days; but must first introdnce and explain the principles of galvanism and electro-magnetism. We shall arrange the branches in order and to the best advantage.

OUR FIRST EXCHANGE.—The first paper that reached our table, under our new organization, was the "Democratic Pharos," of Logansport, Ia. edited by S. A. Hall. We have seldom found a more interesting variety of intelligence in a paper of equal size, than in this. Mr. Hall is entitled to our thanks for so early attention.

The Art of Painting.

There is something peculiarly fascinating in the art, or at least in the practice of painting, and few if any can be found, who have not a fondness for it. Plain painting appears very simple in its process, and thousands of people, without either instruction or experience in the business, have ruined the appearance of their rooms, doors, carriages, &c., by attempting to paint them, instead of employing a workman to do it. In such cases the amateur usually procures a little paint, *ready mixed*, at a shop—not considering that no painter can know how to prepare and temper a colour properly unless he is acquainted with the state and circumstances of the work to which it is to be applied,—and having borrowed a brush for the purpose, he applies the paint with all the skill that *nature* has given him: he is delighted to see how readily he can produce a change of colour, and perhaps succeeds very much to his own satisfaction; but yet leaves it in a state that will not only readily appear decidedly ridiculous to every beholder who is acquainted with even the first principles of the art, but that will defy the skill of the best painter to make the work look decent ever afterward. To remedy these evils, and enable every reader to indulge himself in the occasional employment of painting for his own amusement or convenience, and to enable ordinary practitioners in the art to attain to higher improvements, and embrace a more extensive knowledge of the various branches, are our main objects in presenting a series of instructive essays on this interesting art.

To commence with the first principles of painting in its most simple form, we have only to procure a dilute mixture of white clay, red or yellow earth, (called ochres,) or of ground charcoal and water; and spread it over the work to be painted, with a sponge, or a bunch of moss or grass. The idea readily occurs, however, that this paint would become more permanent, by the addition of a little glue, or mucilage of any kind. This art of painting in *water colours* has been brought to great perfection by means of well-formed brushes of various sizes, and a great variety of fine and beautiful colours and is much in use for painting walls of rooms, plain or figured; also, panoramic scenery, and a great variety of ornamental work. This painting, when the colours are properly tempered with glue and certain other materials, becomes hard and durable, if not exposed to water or moisture; but it is of no value on work that is exposed to the weather, or that often requires washing. We shall now leave the subject of painting in water colours—to be resumed in a future number—and proceed to the more important subject of plain painting in *oil colours*, or with paints ground in oil.

The principal paints used in oil painting, are white lead, yellow ochre, chrome yellow, chrome green, French green, red lead, red ochre, Venetian red, vermillion, lake, Prussian blue, ultra-marine, lamp-black, and ivory black. There are twenty or more other colours, diverse from the above and from each other; but these can hardly be said to be in common use. (To be continued)

New Inventions.

A POCKET IMPLEMENT.—The Philadelphia papers describe an elegant little invention, about the size of a large pencil case. It contains a pen, a pencil, and a tooth-pick; and being unscrewed in the centre, displays a balance for weighing letters, from one-eighth of an ounce to two ounces, with the price of postage marked on the margin. The price of this combination of utilities, is 50 cents.

BORING IRON.—A machine has been put in operation at Chicago, Ill. for boring iron and steel; and is reptesented by the Prairie Farmer, as requiring only the power of one man to bore cold iron as rapidly as wood is bored by an augur. There is considerable appearance of absurdity in the statement however, although the invention is probably very valuable.

A REAPING MACHINE.—A machine has been for some time in operation, in Geneva, the performance of which is highly spoken of, It is driven by two horses, and with the attendance of a man and boy, cuts the grain, leaving it in good order for binding, as fast as ten men can bind the sheaves. It will cut about twenty acres per day. The machine was invented in Maryland, and costs about 100 dollars.

MALLEABLE GLASS.—An invention is announced in some of the European papers, as having been exhibited at St. Etienne, and by which a pure transparent glass is produced, which is susceptible of being bent in any form while cold, without breaking. This production is called *silicon*, and appears likely to prove an invaluable acquisition to the arts and trades.

EDITORIAL COURTESY—AND KINDNESS. — We are elated, and withal affected, with sensations of deep gratitude, by the ready responses and friendly notices, of so many of our most highly esteemed cotemporaries; and especially by the appearance, in many of our exchanges, of our advertisement, at full length. Had we entered the editorial ranks as a political partisan, we should have expected the greetings of political journals of the same stamp, as a matter of course. But the case is far otherwise; and we know of no motive, but that of goodwill, or of courtesy refined, that would have procured so prompt and extensive favours. Friends, we thank you; and should we not have opportunity to reciprocate these favours, it will not be through any deficiency of disposition on our part. To those of our exchanges who insert our advertisement we shall send duplicates; and if by any means any of those should fail of reaching their destination, we hope to be informed thereof that the missing numbers may be promptly supplied.

There are said to be about 14,000,000 of the white population of the United States employed in agriculture, and only 500,000 mechanics and manufacturers.

VARIETY

Recent intelligence from Captain Freemont's expedition, west of the Rocky Mountains, speaks of magnificent forests of cedars, some of which measured 28 feet in circumference, and tall in proportion.

A balloon lately ascended from Kings Road, near London, with eight gentlemen and two ladies. They were in the air about two hours, and at one time were 6,000 feet from the ground.

At the recent trade-sale of books, in New York, books of a useful character were in demand and commanded fair prices, while the fashionable fictions were rejected.

The shafts, chain, cables, and a variety of machinery, and other articles, have been raised from the wreck of the burnt steamboat, Erie, by means of the diving-bell.

A new process of burning brick with anthracite coal, has been invented by Mr. J. W. Andrews, of Morristown, Pa. About one half of the ordinary expense is saved.

The west side of lake Champlain abounds in magnetic ore, from which iron is made by a single heat. It is soft and ductile, and can be drawn into fine wire.

The late arrivals from China, confirm the agreeable intelligence previously received, that the Emperor has revoked the edict against the Christian religion.

It is stated that more than 600 children attend the public schools in Chicago, Ill. This circumstance derives interest from the fact that Chicago itself is but a child of tender age.

India rubber paper is recommended as the most suitable for the printing of the laws, that they may be stretched occasionally for the accommodation of rich culprits.

There is a ladder at James Town, in the island of St. Helena, that extends nearly perpendicular to the height of 800 feet, from the town to a fort on the summit of a mountain.

A new anthracite furnace has been recently put in blast, at Reading, Pa. The Gazette says, the machinery works well in every part, and the prospects appear very promising.

A gentleman recently travelled from Boston, Mass., to Springfield, Ill., by way of Buffalo and Chicago, in six days and seven hours: distance, 1800 miles.

A pair of shoes were lately sent by mail from Philadelphia to a lady in Norfolk, Va. The postage amounted to only 25 cents.

Every student who enters Williams College pledges himself to abstain from all intoxicating liquors during the term of his tuition.

Ten thousand persons are said to be now employed in working the copper mines on Lake Superior. The price of cents must fall.

The directors of the Dublin and Droghidra railroad, have presented Father Matthew with a perpetual free ticket, in the first class carriages.

There are 1,400 newspapers printed in the United States, giving employment to 12,000 hands. Of this number, 240 are printed in the state of N. York.

So, you practice music and drawing, said a wag to a porter who was hauling a handcart with creaking wheels through the street.

The Portland Bulletin says; "Two hundred houses are now in progress of erection here, many of which are to be large and elegant tenements.

The Bank of England has in its vaults at the present time, about 78,000,000 in specie: equal to 6000 cartloads of silver dollars.

The steamer Massachusetts came in one morning last week, freighted with nine hundred passengers! A great floating congregation.

Excellent beds of chalk have lately been discovered in the north-west portion of Arkansas—the first and only discovery of the kind in the U. S.

A bad tempered man, having a hidden but secret enmity against a young man of his acquaintance, gave him his daughter in marriage, in *pure revenge*.

A large scythe manufactory is in the course of erection at Dayton, O. The building is 150 feet long, and will give employment to about 30 hands.

Somebody says that matches may be readily lighted in damp weather by rubbing them on a cork. It will not cost much to make the experiment.

Several canals in England are to be filled up and made into rail-roads. We should like to see the same policy adopted in this country.

The contractors on the Illinois and Michigan canal, advertise for 3000 labourers. This must start the circulation some in those diggins.

A brilliant meteor was lately seen, from various places in the eastern states, in open day-light. It had a fiery appearance, resembling lightning.

A. M. Longworth, of Cincinnati, has a vineyard, from which he expects to make 500 barrels of wine the present season.

Chinese silk-cotton, of a fine glossy appearance, and remarkable strength, is said to be successfully cultivated in Louisiana.

At Haverhill, Mass., 1,180,000 pairs of shoes were manufactured last season, for the making of which $ 250,000 were paid to the workmen.

The present Pope, Gregory XVI., is now in his eightieth year, and much afflicted with a cancer in his face. He was elected in 1831.

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Gently Scan thy Fellow Man.

BY R. M. C.

Deal gently with the stranger's heart;
Thou knowest not how a look or tone,
May joy or grief to him impart,
Who wanders weary and alone:
Thy smile may bring the sunny ray,
That pierces through the clouds of care;
Thy frown may bring the murky day,
Sad usher of the night's despair.

Tread gently o'er the stranger's grave,
Thou knowest not who may slumber there;
Whether the true heart, bold and brave,
Or one borne down by heavy fear:
Life's passions, like Earth's rivers flow,
Only the upper tide appears—
The looker on can never know,
What floods the inner current bears.

Speak gently of the stranger's fate;
Thou knowest not what his doom may be;
The view that opes beyond Death's gate.
Is barred alike to thee and me:
Keep thine own steps in Life's "straight way,"
Guard thine own heart from error's ban,
Thy own impetuous passions stay,
But "gently scan thy fellow man."

To the Mechanic.

What art thou, workman? bound a slave,
Or dost thou fairest Freedom crave?
If freedom be your choice,
Scorn thou oppression, fear not hate
Of local foe or foreign State,
In thine own strength rejoice!

Rejoice, that with the *will* thou hast
The *power* to prove that nought of *caste*
Exists in upright men:
Conceited *exquisites* will spout,
To prove you "asses" out and out,
And make you live on bran!

"Union is strength," then "toe the mark,"
Strike! Liberty will yield a spark,
And kindle beacon flame,
To lead thee on to glorious deeds!
Then till the soil, and sow the seeds
Of everlasting fame!

I Live in Hope of Better Days.

I live in hopes of better days,
And leave the present hour to chance,
Although so long my wish delays,
And still recedes as I advance:
Although hard fortune, too severe,
My life in mourning weeds arrays,
Nor in gay haunts may I appear,
I live in hopes of better days.

Though constant care my portion prove,
By long endurance patient grown,
Still with the time my wishes move,
Within my breast no murmur known:
Whate'er my adverse lot displays,
I live in hopes of better days.

NOMENCLATURES.—A literary Professor gives a novel account of a recent tour through the land of the Yorkers. He says he had already passed through *Syracuse*, *Rome* and *Parma*: had gone from Buffalo to *Batavia*, and on the same day had breakfasted at *St. Helena* and dined at *Elba*: collected fossils at *Moscow*, passed by Painted Post to *Havana;* and after returning by *Auburn* to Albany was taken to *Troy* to take a view of *Mount Olympus* and *Mount Ida*. Surely he must be a great traveller.

THE QUEEN'S VISIT TO GERMANY.—Some of the English papers, received by the Caledonia, make themselves quite ridiculous on the subject of Her Majesty's movements. The royal *cortege* left Bucking ham palace at ten minutes past four on Saturday afternoon, and passing through Pimlius and Vauxhall bridge, proceeded to Woolwich, where the royal yacht lay in readiness to receive Her Majesty, who stepped on board at twenty minutes past five, amidst the roaring of cannon, &c. &c. *Very interesting.*

RIDING A STONE-WALL.—A horse belonging to a man in Ohio, having returned one morning with saddle and bridle but without a rider, several persons went immediately in search of the owner.—He was soon found sitting astride a stone wall, pretty essentially drunk, but whipping and spurring most furiously, and cursing his supposed horse for not galloping faster.

CONSISTENCY.—A boy who was convicted and sentenced for the crime of arson at Baltimore, has been pardoned by the Governor on condition that he will loave the state. A Maryland paper inquires, "if he is fit to live anywhere why is he not fit to live in Maryland." The question is unanswerable. The idea of banishing a criminal from one state to anbther, as a punishment, is superlatively ridiculous.

THE COUNTRY OF SHAKERS.--A Yankee emigrant writes from the banks of the Maumee, that the season has nearly arrived when they may expect to see one half of the inhabitants shaking or taking large doses of calomel to prevent it. Why do not our northern families of Shakers, proceed to that fine country without delay?

STEAMBOAT FIGHT.—Two steamboats, the Adelaide and the Miner, had a long race recently on the Ohio. Finally the Adelaide ran into the Miner, and then the hands got into a fight. At last the Miner was driven ashore where a tree fell upon her. Passengers frightened—nobody to blame.—*Sun.*

Illustrations of Chemistry.

The earth and all things pertaining thereto are composed of simple substances; but what number of simple substances are comprised in the whole, is not yet ascertained, as there are some bodies which evidently partake of different ingredients, but which have not yet been decomposed. Among those which are considered to be simple, are Light, Heat, Oxygen, Hydrogen, Carbon, Platinum, Gold, Silver, Mercury, Copper, Tin, Iron, Lead, Nichel, Zinc, Bismuth, Antimony, Tellurium, Arsenic, Cobalt, Manganese, Tungsten, Uranium, Titanium, Columbium, Tantalium, Cerium, Nikel, Potassium, Sodium, Lime, Alumine, Silex, Magnesia, Barites, and Strontia, or Stronites, with several others, less generally known. Of these, several have recently been proved to be metals, which were formerly supposed to be merely earths; and even the alkalies, potash and soda, are frequently reduced to a pure metallic state. There is evidence that some of the above named, are in some measure compound bodies, but as they cannot be fairly decomposed, they must be treated as simple substances, in chemical process. The electric and magnetic fluids, are also considered as bodies, and as they are known to exert a powerful agency in the chemical combination of other bodies, it is not known but that they may enter into those combinations in a latent state; as heat and light are sometimes known to do.

There is an essential difference between a chemical combination, and a mere mixture of ingredients. For example; sulphur and oxide of iron, (which is a combination of iron and oxygen) both in powder, being mixed together in water, they remain opaque, and no combination takes place: this is a mixture. But mix iron filings and sulphuric acid, (which is a combination of sulphur and oxygen) together in water, and a chemical combination will immediately ensues; the iron will be dissolved, rendered fluid and transparent; and by evaporating the water, the combination will be reduced to a pale green, transparent crystal, which is known as *coperas*, but is chemically called sulphate of iron.

EXPERIMENTS.—Mix together small quantities of alum and acidate of lead, both dry and in fine powder, and they will remain unchanged. Rub them together, and they will chemically combine, and become fluid.

Mix together calomel and ammonia, both purely white; rub them together, and they will combine, and become intensely black.

AN INDIAN STATE.—A project is spoken of in several western papers, which ought to be carried into effect; but we can entertain but faint hopes of it on account of the aristocratic prejudices existing towards the Indian tribes. It is proposed to create a new state west of Arkansas, to embrace the Creek, Cherokee, and Choctaw Indian tribes, and allow the Indians to adopt a republican constitution, and enjoy equal privileges with the whites. This would evidently have the effect to encourage the Indians to put themselves forward rapidly in the knowledge and habits of civilized communities, while it would relieve the Government of a troublesome burden, and greatly conduce to confidence, friendship and the happiness of all parties. We hope the subject will be broached by our next Congress, that we may know the views of members on the subject.

"ANOTHER MURDER FROM RUM"—Is a caption which occurs so frequently in the daily papers, that it may be considered a *standing article;* and the crime of murder, when committed by the influence of *rum*, is spoken of as an occurrence, rather than a crime. The fact is, it is well understood by all, that the criminality in the case, belongs to the persons who imported or manufactured and furnished the rum, rather than to the imbecile person who swallowed it; and yet against those there is no penal law. But let every man who in any way countenances the least traffic in the poison, reflect when he reads thsee reports of the murders of wives, brothers and friends, that he is a party in the crime, and must bear the guilt accordingly.

RAILROAD TO ALBANY.—The people of the river towns are urging the project of a rail-road on the margin of the river. This appears perfectly rational, even though the expense of constructing it should be double that of a more elevated route. It must be obvious to every one, that no other route can fully answer the business requirements; and that even if a rail-road to Albany should be located on any other route, it must eventually be superseded by this. It is a very common thing to see very expensive roads superseded and abandoned, on account of an injudicious location at the first.

CHINESE RANSOM MONEY.—A fresh instalment of $2,000,000 of the Chinese ransom money arrived at London on the 4th ult. The money was deposited in 500 boxes, and weighed 62 hundred weight. On its arrival it was placed in ten wagons, each drawn by four horses, and taken to the mint. This money has been offered to the Bank of England, but refused, wherefore it is proposed to sell it at auction.

A CIRCUS MOBBED.—The Circus at Pittsburg was recently assailed by a mob, composed of young rowdies, who used pistols, bricks and other misiles, at a furious rate, injuring several persons severely. During the riot some of the party succeeded in quietly removing the studding which supported the seats, when loaded with several hundred men, women and children, which fell with a terrific crash; a number of persons were badly injured.

THE WHITE HOUSE.—It is reported that Mrs. Polk has introduced a system of republican simplicity, not hitherto known at the Presidential mansion. This intelligence will be gratifying to many thousands, who, with ourselves, have been often disgusted with details of grand levees, and extravagancies, in styles of pomposity altogether inconsistent with the principles of our government. If the report be correct, this lady is entitled to a nation's gratitude.

Items

Prepared for our last number, but deferred.

We see it stated in several papers, that there are 58,000 grown persons in the states of Virginia and Tennessee, who cannot either read or write. We shall not believe it unless we see the statement under their own signatures.

An old watchman, whose station is on the cupola of the Albany City Hall, invariably cries the hour precisely, although he sleeps so soundly between the hours that neither shouting nor fire-bells can wake him.

A young lady having purchased a "*galvanic ring*," hung it out of the window during a recent storm, to protect her from the lightning. Wonderful as it may appear, the storm passed over, and she was not hurt.

The name of the infant daughter of the Queen of Portugal is Antonio Maria Fernanda Micaela Gabrieta Rafaela de Asis Gonzaga Silveria Julia Augasta de Brazanga de Bourbon-Sajoinia-Coburg Gotha!

The express train of cars on the Northern and Eastern rail-road, England, averages 27 tons, and its average speed is 45 miles per hour. The great western express runs 42 miles per hour with 76 tons.

A civil officer of this city lately lost his pocket-book, and returned in anxious haste to the store at which he had last called, in search of it. He subsequently found it safely stowed away under his arm.

Ex-Governor Corwin, of Ohio, who is rather dark of complexion, was recently mistaken for a runaway slave, and was seized and imprisoned as such. So says the Cincinnati Herald.

The Emperor Nicholas has appointed his grandson, Alexander Alexandrowich, an infant three months old, chief of one of the battalions belonging to the Imperial Guard.

A movement has been commenced in Missouri to induce the Seneca Indians to adopt the habits of industry and civilization. There is a plain prospect of success.

No less than 60,000 children were recently conveyed by the Manchester (England) railroad, a distance of 100 miles, on a holiday trip. The fare charged was sixpence each.

The *Reading* Academy is spoken of by an exchange paper. We had supposed that *reading* was practised in *all* literary academies. But this one is situated at *Reading*, Pa.

A war party of the Dominicans, in St. Domingo, lately surprised a village of the Hatiens, in the night, and murdered all its inhabitants, men, women and children.

Mr. W. Crispin, of Great Timber Creek, N. J., has corn growing thirteen feet high and six feet in circumference. No wonder that "great timber" should have grown there.

Several Jews in Cincinnati have been fined $3 each for working on *Saturday*. This is right, although the circumstance is without precedent in this country.

A young man in Boston was lately bitten on the hand by a rat, by which he was so severely poisoned, that his life was despaired of, when we last heard from him.

The receipts on the Georgia Central Railroad, during four months ending July 30th, were greater by $43,698 than they were during the same period last year.

The number of passengers between New York and Boston, on all the principal routes, during the month of July, was 18,169, exclusive of way-passengers.

A church-going gentleman, in Spaulding, Eng., wears a coat on Sundays, which he has worn to church for 48 years. It is his "go-to-meeting-coat."

The Maine Cultivator advises all married men to be kind, gentle and loving to their wives, in public, though they may quarrel and abuse them in private.

Several dark spots have recently appeared on the sun. One of them has been measured and found to be 15,000 miles in diamater; another, 6,000.

Seven brothers lately met at concord, N.H., whose united ages are 453 years. Not one of them remembers ever seeing the seven all together.

The number of slaves in the world is estimated at 6,650,000, of which number nearly one half are in the "Land of Liberty,"—the United States.

Lozenges and other sugar confectionary, are made of plaster of Paris, according to the statement of several Scotch confectioners.

WELL DONE DIXON.—Some of the Southern papers appear to be seriously alarmed in consequence of the terrific representation in the New York Packet, concerning a diabolical conspiracy against the peace of the South, &c. The fact is, the article alluded to, is a sheer burlesque on the cracked up *galvanic rings*.

A SINGULAR INCIDENT.—When the British Queen was about to prorogue the Parliament a few days since, the Duke of Argyle, whose duty according to custom, was to carry the crown on a cushion, stumbled and fell at the foot of the throne, tumbling the emblem of royalty, with its glittering diamonds, uncerimoniously on the floor.

WHAT NEXT?—A basket containing a lovely infant, five or six months old, was recently left on the track of a railroad, north of Troy. It was with difficulty that the engineer stopped the train in season to prevent crushing it. We do hope the wretch who deposited it will be discovered and duly punished.

Mammoth Cave.

[From Arthur's Lady's Magazine for July.]

The scenery of Edmonson Co. Kentucky, in which mammoth cave is situated, is unusually wild and picturesque. The surface is much broken, being, in fact, a succession of high hills, but a little distance apart, between which are deep and narrow valleys. The bottoms of these valleys, or ravines, are composed of a spongy, yielding soil, and are full of pits, or "sink-holes," some of them of great extent, and filled with treacherous mire, the consistency of which is little greater than that of water. The soil upon the hills is generally composed of rich vegetable mould of considerable depth, which has gradually formed upon a substratum of rock, clay, or gravel. This wide territory was formally nearly destitue of vegetation—hence it has been called the "Barrens;" but it is now covered with a luxuriant growth of timber, long grass, vines, and wild flowers of endless variety. This change has been effected by nature, during the last thirty-five years. The prospect has thus been rendered more pleasing to the eye, to which is presented a view seldom surpassed in wild and solitary beauty.

Mammoth Cave is situated in one of the deep and narrow ravines above mentioned, which. gradually growing wider, extends to Green River (so called from the dark ocean colour of its waters) a large and beautiful stream, flowing within half a mile of the mouth of the cavern. This cave is literally "a world within a world," so numerous are its objects of beauty and grandeur. To describe it completely would be impossible, for the best description would be but a cold epitome of its wonders. Nor will our limits allow more than a brief notice of a few of its more striking curiosities which, we trust, will not be unacceptable to our readers.

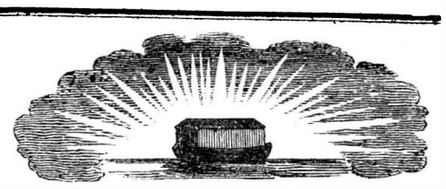
The entrance to the cave is thirty feet high and forty feet broad, the archway being composed of a thick stratum of limestone. The descent is made by means of stone steps, which lead to the floor of the "Main Cave," which is divided into two parts, separated from each other by streams of water of which we shall speak in the proper place. The cave upon this side of the river is remarkable for the gloomy grandeur and sublimity of its scenery. It abounds in spacious rooms, precipices overhanging apparently bottomless gulfs, lofty galleries, and magnificent domes, reaching upwards of hundreds of feet, which, when brightly lighted, dazzle the eye with the brilliancy reflected from their crystal walls. The feelings of the beholder are those of awe, and he is overwhelmed with a sense of the immensity of the place. That portion of the cave which is situated beyond the rivers, is less grand, but more beautiful in scenery, and is characterized by the peculiar delicacy as well as the variety of the formation of gypsum, which hang from the ceiling. The general formation of the cave, however, is limestone.

The feelings of the visitor on entering the cave, for the first time, are those of awe, not unmingled with dread. If it be in the summer, he feels the cool air issuing from its mouth, as if it were the breath of some huge monster, and hears the distant sound of the hidden waterfall; fain would he penetrate with sight, before entering, the darkness within, which has never yet been banished by the light of day.

After entering the broad mouth and passing the "Narrows," the "Rotunda" is the first object of note which presents itself. This is a spacious circular chamber one hundred feet in diameter, and forty feet high. When illuminated by "Bengal lights" the formations upon the walls reflect the cave in a thousand different shades of brilliancy;—the different avenues leading off in various directions, are also partially revealed, until the view is shut out by the impenetrable gloom beyond. The remains of the "Saltpetre works," which were in operation here, during the war of 1813, are yet to be seen. The peculiar atmosphere of the cave has kept the wood in a perfect state of preservation.

To the right of the Rotunda is Audubon's Avenue, which is nearly as large as the main cave. In this, in the winter season are found great quantities of bats, hanging in clusters of thousands from the ceiling. Hence the avenue has been called after the celebrated ornithologist, although we cannot say that we entirely acquiesce in the propriety of the name. Beyond the "Bat's-nest," the cave grows wider and higher, from the walls of which, are huge rocky projections to which has been given the name of the "Kentucky Cliffs," from their resemblance to the cliffs on the Kentucky River. These rocks tower up to the distance of sixty-five feet. The remoter end of these cliffs assume, by degrees, the shape and appearance of a gallery, about midway between the floor and the ceiling of the cave; hence the name of the "Church-gallery." This leads to the "Church," a spacious chamber, three hundred feet square and sixty-five feet high. In the centre has been erected a stand for preaching, and meetings have frequently been held here. Beyond the "Gothic Galleries," which are elevated sixty-five feet from the floor, and which lead from the "Church," is the entrance to "Gothic Avenue," which takes its name from a resemblance between its structure and the Gothic order of architecture. The remote end of this avenue is distant two-and-a-half miles from the entrance of the cave. In this branch are the "Haunted Chambers," a series, or cluster of contiguous rooms, so connected together that the sligtest noise made in one is re-echoed throughout all the rest. Beyond the haunted chambers, in the Gothic Avenue, are some splendid stalagmites and stalactites. The first and principal one is the "Port-oak Pillar" extending from the floor to the ceiling, and several feet in diameter, as if supporting the roof of the cave. A short distance beyond in the "Gothic Chapel" is another pillar of crystalized limestone. It is larger than the one already mentioned, and is called "Hercules Pillar." Its diameter is eight feet, and its surface is covered with crystals, which sparkle like diamonds in the light of the torches. Next to the Gothic Chapel, is "Vulcan's shop," with its huge limestone anvil, one of the most curious formations in this part of the cave, which boasts of many beautiful ones. Among these, the principal are the "Elephant's Head" and the "Arm-Chair," The first is an exact representation of an elephant's head; so correct is it indeed, that, at the first view it has the appearance of having come from the sculptor's hand. The second is formed by the union of a stalagmite and a stalactite. It is, in reality, a pillar, with a cavity on one side in which is a convenient seat and a foot stool. The 'Lover's Leap" is temptingly near this place for reflection. It is a rock, projecting over a deep pit, into which the plunge would be fearful! the name given to it is well deserved—that is, if lovers now-a-days ever leap over precipices. But I had nearly forgotton to mention the "Flying Indian," one of the greatest curiosities of the cave, This is a black figure upon the ceiling, (that is perfectly smooth and white] formed by the dripping of water previously impregnated with some bituminous substance. This is retained and absorbed by the rock, which it has coloured; while accident has given the outlines of an Indian—with outstretched arms, grasping his bow and arrows. The position of the figure has caused it to be named the "Flying Indian." In another portion of the cave is a representation of a panther upon the dead limb of a tree which is singularly correct. Near by is the "Giant Coffin," a huge rock, fifty feet long and ten feet high, having the exact shape of a coffin. At this point is the "Acute Angle" of the cave, after turning which, you enter the "Star-chamber," decidedly the most beautiful curiosity in the cave, although there are other portions which may surpass it in grandeur.

[To be continued.]



Religious Intelligence.

The Stamford Advocate reports some of the proceedings of a *camp-meeting* recently held at Rye, near the village of Mormaraneck. The editor was present during the last night of the meeting, and gives a vivid description of some of the *apparent* exercises, and of the *methods* practised and encouraged by the *Methodists* to advance what they believe to be *religion*. The exercises of which he speaks most particularly, commenced at 10 o'clock in the evening and continued till daylight, and appear to have been of a character not very common, even with that sect, as he remarks, "We have visited a great many camp meetings in our day, but the scenes of Friday night for confusion, and to us, unmeaning and unseemly shouting, screaming, pounding of seats, singing, jumping, tumbling &c., are without precedent by any thing we have heretofore witnessed." We should be willing to copy his description and remarks entire, if our limits would admit; but as this is not expedient, we shall only add that there were several ostensible conversions, and that *Methodism* was triumphant; and there cannot be a doubt that all those whose hearts were truly sincere; who were willing to abandon the riches honors and pleasures of this world, for the sake of the love and favor of God, regardless of religious popularity, or that of the sect of Methodists, were made wiser and better. Such minds should be cautious however, to compare their exercises and experience dilligently with the Divine Word,—the Scriptures of Truth;—and to "try the Spirits" by this rule, where by to distinguish between the true SPIRIT and a spirit of sectarian fanaticism. Extravagance and enthusiasm in religion, may be less dangerous, however, than a fashionable, cold and lifeless formality;—a mere profession without the life and power thereof. It may be adopted as an invariable axiom, that no religious excitement or movement can be genuine, unless accompanied with a love and fondness of the sacred scriptures, and a close adherence to the precepts and principles, therein inculcated and enjoined.

THE NOBLE BEREANS.—When the gospel was first published by the apostles, they were generally opposed by the Jews, and especially by the priests and the pharisees. It was of little avail that they proved the truth of the doctrine by the Scriptures; for that source of light the Jews would not take the trouble to examine. It was enough for them to know that this doctrine was something different from their long accustomed way of thinking; and they rejected the gospel without giving the subject an examination. The Bereans, however, were "more noble;" they first heard, and then examined the scriptures to see whether these things were so. They did not go to their creeds, nor to their ecclesiastical teachers to enquire about it, but to the holy scriptures of truth. It is no wonder that the apostle called them noble. They manifested a noble and praiseworthy spirit, and it is left on record for our instruction.

UTILITY OF ADVERSITY.—There is much truth and valuable knowledge embodied in the following brief extract: every reader will do well to remember it. "A smooth sea never made a skillful mariner. Neither do uninterpreted prosperity and success qualify a man for usefulness and happiness. The storms of adversity, like the storms of the ocean, arouse the faculties, and excite the invention, prudence, skill and fortitude of the voyager.

FIRES AT BROOKLYN AND PHILADELPHIA.—A fire occurred at Brooklyn, about twelve o'clock on Saturday night, which consumed a coffee and spice mill in Adams street, and seven dwelling houses adjoining; also a stable and several valuable workshops. At about the same time a fire occurred in Arch St. Philadelphia, which destroyed property to the amount of $30,000. This was succeeded by another fire on Broad St. which destroyed several large ware houses, with stables and other buildings. Several persons were injured by the falling of walls.

LATE FROM TEXAS.—The Steamer Alabama arrived at New Orleans on the 30ult. bringing advices from Gen. Taylors head quarters, up to the 27th. The troops from New Orleans had arrived, in good health and spirits. The whole force under Gen. Taylor at Corpus Christi, number about 2000 men. The Mexican Gen. Arista was fortifying himself at Matamoras, with about the same number. There is no prospect of the advance of either army for the present.

NEW IRON WORKS.—The "Montour Mill," at Danville, Pa., has lately commenced operation on a large scale. It is intended for the manufactory of railroad iron, and is said to be the largest and best rolling mill in this country. It is truly gratifying to see a prospect of supplying the demand for this article, without being dependent on foreign manufactures.

AMERICAN COINAGE.—There were coined at the U. S. mints during the month of July, $55,000 in eagles; $131 000 in half eagles; $5,737 in quarter eagles; $71,000 in half dollars; $15,000 in quarter dollars; $129,000 in dimes; $49,000 in half dimes; and 344,367 cents. Total value, $459,081.

EXPENSIVE RAILROAD.—The Rouen and Havre railroad, which is now in progress, is to pass through tunnels nearly four miles; and the viaduct over the Mirville, is to be 1700 feet in length and 170 feet high. This road is expected to be finished by the first of May.

LIONS IN TEXAS.—The Texas News of the 11 ult, says that three large Lions have lately been seen in Brazovia county. One of them was killed, weighing 450 pounds. They resemble the African Lion, both in size and colour.

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Most numerous are the inventions lost to the world for ages, and many doubtless to this day, because the inventors, being poor, could not bring them out. To remedy this evil to some extent, the following plan is suggested.

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G PECK & CO. having, and being offered, several new inventions, worthy to be tested and brought out, present to the public the following liberal offers.

One invention promises great usefulness to most cities, villages, and farmers; one, great aid to agriculture. One, greater safety and cheapness to rail-road conveyance; one a great saving of expense, time and toil in education, &c.

They require means to bring them into use. If many will furnish each a little the burden will be light—the success almost certain, and the advantage the greater; and this advantage the inventors will gladly share with the helpers. Incurring much expense, and risking much themselves, it cannot be presuming too much to trust that an inteligent public will see it to be liberal, and wise to risk a little and invest the small sum proposed on the terms here offered.

It is little any can lose if he were to get no return, while we must lose far more, even for advertising, if none accept our offers. But they will have some return, and may much gain. Let then each send us his name and $2, or 25 cents weekly for ten weeks, and secure the advantages of these inventions.

We add one other consideration. Had Fitch, who first applied steam to propel a boat, and was the real first inventor of steam boats, received a little aid, steam boats would have been in operation more than 50 years ago, and our country would have had the undisputed honor of the invention. But he exhausted his means—none would help—and though he knew it was worth millions, he died in poverty, and our country was the loser for a half century.

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A share or town right of a valuable patent—50 or 100 acres of good farming land; $2, $30, or $85 cash; a copy of the circular interest tables, or a useful Essay, to be had on easy terms.

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The town right will be his who procures 25 share subscribers and sends us the money. The 50 acres his who sends us the money for 150 subscribers within three months. The 100 acres his who sends us for 300 in four months. The $2 his who sends us the $2 each for 12 subscribers in 2 months. $30 his who sends for 160 in 3 months, $85 his who sends for 250 in 6 months. The interest tables or Essay shall be his who sends us immediately the names of each waggon, carriage, plough or harness maker, of each farmer who keeps bees or silk worms, of owners of furnaces or forges, of each physician, minister, teacher, miller, tanner and merchant of the village or town where he lives, twenty-five names or more; and also a share of the patent right if he sends 25 or more names and 25 cents cash within one month.

The patent share to each of those who pay $2 within 8 weeks from next September 1, or before, will embrace three inventions; to those who pay in the next 5 weeks, two inventions; and but one to others, and not this unless cash is received in 4 months, unless we choose. The essay or tables will also be his who pays before September 20th. What we desire is speedy work—hence these large premiums. Most important inventions will thus be secured, and a profitable share to each.

We also offer to any one who will send us $10, $30, $75 or $125, to give him 3, 9, 27 or 54 shares one-third in each of three inventions, or a town right of one, two or three of the patents, and a privilege to sell rights, at great profit; and he may commence at once. We can give good business of this kind now. If our project meets with the favor we expect we shall be able to give a great deal of business of this kind, and thus greatly promote enterprize and industry. We have the best machine to clean wheat of smut, garlic, &c.; price $75. Over 70 have been put in operation in one county in Pennsylvania. We have also the best cultivator for tilling corn and putting in wheat and rye, from $6 to $15. Also the neatest, handiest and swiftest straw cutter of its size, for $12. Office for orders at room 13, 25 Pine street, next to the Custom House.

The inventions will be of different values, and will be put into such number of shares as will make each share worth $5 or more. We will dispose of the rights, keep the accounts, and pay to share holders the dividends. We shall also from time to time, quarterly or oftener, send them a paper giving them a full account of the inventions, as far as it will be best to publish it. We shall send them the first in September. Let it announce that subscribers are already in to secure the whole project. It will not fail if no more subscribe than we already have. We can do a little, and each who helps will aid us to do more; thus none will lose, but if many help, the better will it be to each. One of the most promising inventions will be very costly to start. We want 10,000 subscribers for it: but it will be worth ten times the cost; and it is certain of success, it has been so far tested. The others are very excellent in promise.

The inventions are very important; the land good in this State or in Pennsylvania; the Tables useful, and the Essay on a subject of deep interest to all; and the periodical we shall occasionally send, free of charge, will be of general interest to farmers, mechanics, patentees, physicians, ministers, and owners of minerals, and to all.

It is thus the interest of all to push this project. Let then each improve this offer at once, and have the satisfaction of aiding to bring out great inventions that promise vast benefit to mankind, and good profit to the helpers, as well as timely aid to some worthy inventors, who are struggling with poverty, whom we greatly desire to aid. Now is the WORD! Now or never. If QUICKLY done, it will be DONE and WELL done, and a GOOD THING done.

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The Galvanic Rings have now been several months before the English public, and the universal reputation they have acquired is sufficient evidence of their extraordinary power in the prevention and cure of the diseases for which they are recommended. They have been used with perfect success in all cases of Rheumatism, acute or chronic, Gout, Tic Dolereaux, Sick Headache, Indigestion, Paralysis, Stiff Joints, General Debility, Deficiency of Nervous Energy, Neuralgia, and all Nervous Disorders. The galvanic power which they possess is gradual and constant, and the beneficial effects they produce upon the system must be witnessed to be believed. The Galvanic Rings are in every way perfectly harmless, and are sold at prices to be within the reach of all desirous of testing their efficacy. *Dr. Christie* warns the American public from the beginning, to beware of *spurious imitations*. The only Agency in New York is at 134 FULTON STREET, a few doors from Broadway, and from the secret process by which the metals are prepared to be rendered sensitive and efficient, all imitations must be entirely devoid of any galvanic effect. CHRISTIE'S MAGNETIC FLUID, used in connection with the Rings, to accelerate and render effective the galvanic action, is only to be procured at the same place. s11

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PRATT & CO.'S GALLERY OF COLOURED PHOTOGRAPHS, No. 293 Broadway, Laforge Buildings, Rooms Nos. 31 and 32, up stairs.

E. W. PRATT, late operator for Plumbe, flatters himself that he can give as good satisfaction as any other professor of the art. The public are requested to call and examine specimens. *Prices will vary from* $1 to $15.

Likenesses of deceased persons taken in any part of this city and vicinity.

Instruction will be given on more reasonable terms than at any other establishment in the city. au 28

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Which being made expressly to my orders, will be found good, and the Mechanic may place confidence in them.

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AMERICAN INSTITUTE FAIR.

THE EIGHTEENTH GREAT FAIR OF THE AMERICAN INSTITUTE at NIBLO'S GARDEN, New-York.—The Fair will open on Monday, the 6th of October next, at 12 o'clock, M. The days for delivering articles at the Garden, THURSDAY, FRIDAY and SATURDAY previous. The National Convention of Farmers, Gardeners, and Silk Culturists; will be held on Thursday, 9th October. Delegates, without further notice, are invited from all parts of the Union. The Cattle Show will be held on the ground between 23d and 24th streets, 5th Avenue. Ploughing and Spading Matches, &c., as usual. Head Quarters for Managers, Committees, &c., secured in the Madison Cottage. Fine horses for draft, healthy fat cattle, and sheep for market, well matched and trained working cattle, and new and useful inventions, will command higher premiums than at any preceding Fair. An opening, anniversary, &c. Addresses will be delivered by the most eminent orators of our country. The people of this great Republic are invoked zealously to co-operate in carrying out this exhibition, which promises far to exceed anything that has gone before. au23

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